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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/744,393	03/05/2001	Samuel W. D. Steel	36-1553	5720
23117	7590	02/16/2006	EXAMINER	
NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203			LE, MIRANDA	
			ART UNIT	PAPER NUMBER
			2167	
DATE MAILED: 02/16/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/744,393

Applicant(s)

STEEL ET AL.

Examiner

Miranda Le

Art Unit

2167

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 2-5 and 7-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-5 and 7-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 06/15/2005 has been entered.
2. This communication is responsive to Amendment filed 06/15/2005.
3. Claims 2-5, 7-19 are pending in this application. Claims 2, 7, 11 are independent claims. This action is made non-Final.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless:

(e) the invention was described in

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 2-5, 7-9, 11-15, 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Smith et al. (US Patent No. 6,052,693).

Smith anticipated independent claims 2, 7, 11, by the following:

**As to claims 2, 7,** Smith teaches a method of generating an index entry for a record comprising a semi structure database, the database comprising a plurality of records (i.e. In the preferred embodiment, each source document is represented by a record entry in each of three database tables, col. 5, lines 50-53), each record comprising one or more fields (i.e. This table has at least one column or field for each value in the external information of the manuscript source document, col. 5, lines 53-55) having a plurality of characters therein, the method including (See Abstract, col. 5, line 50 to col. 6, line 7):

(i) analyzing each field in accordance with a predetermined criterion (i.e. For each index plan item that it prepares 400, the preferred embodiment also call upon a predefined list of attributes 420 that it can prepare from the electronic source document 100. These attribute values for the proposed index plan item 410 take on the values stored in the source document record fields, col. 15, lines 48-53) so as to identify an entry within said field (col. 15, lines 36-63);

(ii) generating at least one index entry representing a concordance between an identified entry and the record corresponding to the identified entry (i.e. In the preferred embodiment no entity, link or attribute value is ever directly added to the structured entity relationship model. Instead the index plan 104 is used to collate and organize proposed entities, links and attribute values, before they are researched in a later sub-process, col. 16, lines 3-8) (col. 15, line 65 to col. 16, line 33);

for each of a plurality of predetermined formats (i.e. An alphanumeric token is defined as an alphanumeric character followed by any number of alphanumeric characters and/or the hyphen (-) and underscore (.sub.31) characters. Once an alphanumeric token is recognized, it

is classified, col. 16, lines 52-58) in (i) further including searching said field to identify a sequence of characters having a format corresponding to the predetermined format (i.e. NUMBER, VARNAME, col. 16, lines 58-59), said identified sequence characters being deemed to constitute an identified entry (Fig. 2, col. 6, line 51 to col. 7, line 65, col. 16, line 38 to col. 21, line 41);

(iii) for at least one field, defining any characters not identified as an entry (i.e. Resume 270 node in Table 1 at col. 7) in step (i) as a free text entry (See Fig. 2, Table 1 in col. 7, col. 6, line 51 to col. 7, line 65).

**As per claim 11**, Smith teaches apparatus for accessing a semi-database in accordance with an input request for information, wherein the semi-structured database comprises a plurality of items, each item comprising one or more fields having a plurality of characters therein, at least one of the fields being a free text (i.e. Resume 270 node in Table 1 at col. 7), the apparatus comprising (See Fig. 2, Table 1 in col. 7, col. 6, line 51 to col. 7, line 65):

means for accessing a data store comprising a plurality of index entries each representing a concordance between an entry in a field of an item and an item (i.e. The transference of attribute value information into a research query object commences by transferring all attribute values from the index plan proposed item, into corresponding query attributes of a research query object of the corresponding type. Validated attribute values are simply mapped across to corresponding research query object attributes. All attribute values are coerced into valid query strings, col. 25, lines 49-56) (col. 23, line 49 to col. 24, line 47, col. 25, line 21 to col. 26, line 54);

input means for receiving a request for information, the request comprising a natural language phrase (i.e. The Match Function typically tokenizes the Query Attribute strings according to the syntax described earlier in this document, col. 28, lines 49-59);

a parse for parsing the natural language phrase to determine components of the phrase (i.e. Each match function is passed a template Search Clause structure which contains pre-set values for the group and rule and default values for the score setting. The Query Attribute names, Database Column names and Parameters from the Search Rule are also passed to the Match Function as are any parameters relevant to the whole search (in the preferred embodiment there is one option for Case Sensitive/Insensitive match), col. 28, lines 41-49) (col. 27, line 51 to col. 30, line 51);

a slot filter arrange to identify (i.e. Each Match Function takes the list of Database Columns and Query Attributes defined in a Strategy Rule and generates a Search Clause which describes a particular type of search, col. 28, lines 33-36), from the components of the phrase determined by the parser, one or more object components of the phrase representing an object of the request, the slot filter being further provided with a slot-and-filter request wherein each slot thereof corresponds to a group of index entries and wherein the slot filter is arranged to allocate at least one of the identified object components to a respective slot of the slot-and-filter request (col. 27, line 51 to col. 30, line 51); and

a query constructor for accessing the data store, wherein the query constructor is arranged to compare the allocated component with index entries within a group corresponding to the slot of the allocated component so as to identify an index entry corresponding thereto (i.e. Once Search Clauses have been created for all the enabled Strategy Groups in the current Strategy, the

list of Search Clauses is used to generate complete query strings for both the Database server and the client, col. 30, lines 8-11), and to use the identified index entry to identify an item in the semi-structured database (col. 27, line 51 to col. 30, line 51).

**As to claims 3, 8,** Smith teaches “the free text entry comprises at least one free text word defined by a sequence of alphanumeric characters, the method further comprising the steps of:

“(iv) identifying at least one free text word in a field by comparing the free text entry with at least one selection criterion defining one or more predetermined characteristics of a free text word” at Fig. 2, col. 6, line 51 to col. 7, line 65, col. 22, lines 8-52.

“(v) generating a plurality of index entries representing a concordance between the selected free text words determined in (iv) and the respective records” at Fig. 2, col. 6, line 51 to col. 7, line 65, col. 14, line 45 to col. 15, line 36.

**As to claims 4, 9,** Smith teaches “the records within the semi-structured database are further arranged in groups of records, each group of records being located in a heading field and being identified by at least one heading entry, wherein the method further comprises, for each heading field:

“(iv) identifying heading entries by comparing each heading field with each of a plurality of selection criteria, each selection criterion defining one or more predetermined characteristics of a respective heading entry” at Fig. 2, col. 6, line 51 to col. 7, line 65, col. 14, line 47 to col. 15, line 63, col. 16, lines 10-65.

“(v) generating a plurality of index entries representing a concordance between the heading entries determined in (iv) and the group of records in the heading field” at Fig. 2, col. 6, line 51 to col. 7, line 65, col. 14, line 47 to col. 15, line 63, col. 22, lines 8-52.

**As per claim 5**, Smith teaches “arranging the index entries into groups of index entries in accordance with predetermined criteria” at Fig. 2, col. 6, line 51 to col. 7, line 65, col. 14, line 47 to col. 15, line 63, col. 16, lines 10-65.

**As per claim 12**, Smith teaches “an index generator comprising a processor arranged, in respect of each item in the semi-structured database, to analyze each field in accordance with a predetermined criterion so as to identify an entry within said field, and to generate at least one index entry representing a concordance between an identified entry and the item corresponding to the identified entry, and store the generated index entry in the data store” at Fig. 2, col. 6, line 51 to col. 7, line 65, col. 14, line 47 to col. 15, line 63, col. 16, lines 10-65, col. 22, lines 8-52.

“wherein for each of a plurality of predetermined formats, the processor is arranged to search said free text field to identify a sequence of characters having a format corresponding to the predetermined format, said identified sequence of characters being deemed to constitute an identified entry” at Fig. 2, col. 6, line 51 to col. 7, line 65, col. 14, line 47 to col. 15, line 63, col. 22, lines 8-52.

**As per claim 13**, Smith teaches “wherein for the free text field, the processor is arranged to define any data not identified as an entry as a free text entry” at Fig. 2, col. 6, line 51 to col. 7, line 65, col. 14, line 47 to col. 15, line 63, col. 16, lines 10-65.

**As per claim 14**, Smith teaches “the free text entry comprises at least one free text word defined by a sequence of alphanumeric characters, the processor being arranged to identify at least one selected free text word for a field by comparing the free text entry with at least one selection criterion defining one or more predetermined characteristics of a selected free text



word” at Fig. 2, col. 6, line 51 to col. 7, line 65, col. 14, line 47 to col. 15, line 63, col. 22, lines 8-52).

**As per claim 15**, Smith teaches “the items within the semi-structured database are further arranged in groups of items, each group being located in a heading field and being identified by at least one heading entry, wherein the processor is arranged to identify a heading entry by comparing each heading field with each of a plurality of selection criteria defining one or more predetermined characteristics of a respective heading entry, and is arranged to generate index entries representing a concordance between such heading entries and the group of items in the heading field” at Fig. 2, col. 6, line 51 to col. 7, line 65, col. 14, line 45 to col. 15, line 36, col. 16, lines 10-65.

**As per claim 19**, Smith teaches “the data store is part of the apparatus” at Fig. 2, col. 6, line 51 to col. 7, line 65, col. 14, line 47 to col. 15, line 63.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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6. Claims 10, 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al. (US Patent No. 6,052,693), in view of Liddy et al. (US Patent No. 6,026,388).

**As per claim 10**, Smith teaches input means for receiving the request (i.e. The Match Function typically tokenizes the Query Attribute strings according to the syntax described earlier in this document, col. 28, lines 49-59);

a parser for parsing the request to determine the components of the request (i.e. Each match function is passed a template Search Clause structure which contains pre-set values for the group and rule and default values for the score setting. The Query Attribute names, Database Column names and Parameters from the Search Rule are also passed to the Match Function as are any parameters relevant to the whole search (in the preferred embodiment there is one option for Case Sensitive/Insensitive match), col. 28, lines 41-49) (col. 27, line 51 to col. 30, line 51);

a query constructor for accessing a database (i.e. Once Search Clauses have been created for all the enabled Strategy Groups in the current Strategy, the list of Search Clauses is used to generate complete query strings for both the Database server and the client, col. 30, lines 8-11) (col. 27, line 51 to col. 30, line 51);

wherein the query constructor arrange to compare each of the components allocated to a slot in the slot-and-filter request to one or more index entries in a respective group of index entries (i.e. Once Search Clauses have been created for all the enabled Strategy Groups in the current Strategy, the list of Search Clauses is used to generate complete query strings for both the Database server and the client, col. 30, lines 8-11), to select the index entries for records which have entries including any of the components and, to use the index entries to determine the

location of each respective record in the semi-structure database (col. 27, line 51 to col. 30, line 51);

Smith teaches the slot filler (i.e. Each Match Function takes the list of Database Columns and Query Attributes defined in a Strategy Rule and generates a Search Clause which describes a particular type of search, col. 28, lines 33-36), but Smith does not specifically teach “a slot filler for determining whether the request includes any verb components forming a verb or verb group; and, if the request includes any verb components, the slot filler determines the position of the verb or verb group within the request, and determines any subject components representing the subject of the request and any object components representing the object of the request using the position of the verb or verb group; and, if the request includes no verb components, the slot filler determines any components to be object components, wherein each slot corresponds to one of the group of index entries and wherein the slot filler is arranged to allocate at least one component to a respective slot of a slot-and-filler request”. However, Liddy teaches:

“a slot filler for determining whether the request includes any verb components forming a verb or verb group” at col. 12, lines 21-29, col. 32, lines 3-65.

“and, if the request includes any verb components, the slot filler determines the position of the verb or verb group within the request, and determines any subject components representing the subject of the request and any object components representing the object of the request using the position of the verb or verb group” at col. 12, lines 21-29, col. 18, line 49 to col. 20, line 47, col. 30, lines 1-60).

“and, if the request includes no verb components, the slot filler determines any components to be object components, wherein each slot corresponds to one of the group of index

entries and wherein the slot filler is arranged to allocate at least one component to a respective slot of a slot-and-filler request” at col. 12, lines 21-29, col. 18, line 49 to col. 20, line 47, col. 32, lines 3-65.

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Smith with the teachings of Liddy to include the claimed limitations because it would provide a system that would recognize words indicating a mandatory requirement of the natural language query.

**As per claim 16**, Smith does not specifically teach “the slot filler is arranged to identify verb components forming a verb or verb group in the parsed request and to allocate any such identified verb components to a slot in accordance with a predetermined mapping between verb components and slots”. Liddy teaches this limitation at col. 12, lines 21-29, col. 30, lines 1-60.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Smith with the teachings of Liddy to include the slot filler is arranged to identify verb components forming a verb or verb group in the parsed request and to allocate any such identified verb components to a slot in accordance with a predetermined mapping between verb components and slots because it would provide a system that would recognize words indicating a mandatory requirement of the natural language query.

**As per claim 17**, Liddy teaches “the slot filler is arranged to identify any subject components in accordance with the position of the verb or verb group within the request and to allocate any such identified subject components to a slot in accordance with a predetermined mapping between subject components and slots” at col. 12, lines 21-29, col. 18, line 49 to col. 20, line 47, col. 30, lines 1-60.

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**As per claim 18**, Liddy teaches “in the absence of identifying verb components, the slot filler is arranged to deem any components to be object components” at col. 12, lines 21-29, col. 18, line 49 to col. 20, line 47, col. 30, lines 1-60.

### *Conclusion*

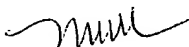
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Miranda Le whose telephone number is (571) 272-4112. The examiner can normally be reached on Monday through Friday from 8:30 AM to 5:00 PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jean Homere, Esq., can be reached on (571) 272-3780. The fax number to this Art Unit is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Miranda Le  
February 10, 2006



WILLIAM A. JOHNSON  
PATENT EXAMINER